PATENT
Customer No. 22,852
Attorney Docket No. 02473.0018

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	)
Robin TARRY et al.	) Group Art Unit: 3712
Application No.: 09/225,574	) Examiner: Bena B. MILLER
Filed: January 5, 1999	)
For: VIDEO INSTRUCTIONAL SYSTEM AND METHOD FOR TEACHING MOTOR SKILLS	) Confirmation No.: 2324

Mail Stop Appeal Brief--Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPEAL BRIEF UNDER 37 C.F.R. § 1.192

Appellants submit this Brief on Appeal in response to the final rejection of claims 38-54 in the Final Office Action dated September 29, 2003. Claims 38-54 are the only claims pending in this application, and the Appendix contains the current state of these claims. In accordance with 37 C.F.R. 1.192, this Brief is timely filed in triplicate subsequent to a corresponding Notice of Appeal filed on January 29, 2004, accompanied with the requisite fee. If any additional fees are due, Appellants request that these fees be charged to our Deposit Account No. 06-0916.

04/30/2004 WASFAW1 00000022 09225574
01 FC:2402 165.00 OP

04/30/2004 WASFAW1 00000022 09225574
02 FC:2251 55.00 OP
03 FC:9998 10.00 OP

I. Real Party In Interest

The real party in interest is Personal Pro, LLC as indicated by an assignment recorded on January 5, 1999, on Reel 9696 at Frame 0049.

II. Related Appeals and Interferences

Appellants know of no other related appeals or interferences that may have a bearing on the Board's decision in the current appeal.

III. Status Of Claims

Claims 38-54 are pending in this application. All pending claims are subject to rejection in a Final Office Action dated September 29, 2003. In that Final Office Action, the Examiner rejected claims 38, 40-42, 46-48, 50, 51, and 54 under 35 U.S.C. § 102(b) as anticipated by Mann (U.S. Patent No. 5,184,295) and rejected claims 39, 43-45, 52, and 53 under 35 U.S.C. § 103(a) as unpatentable over Mann in view of Brostedt (WO 98/25250).

In an Advisory Action dated December 30, 2003, the Examiner refused to withdraw the remaining final rejections and refused entry of the amendments made in an Amendment After Final filed on December 3, 2003. Appellants accordingly appeal the final rejection of claims 38-54.

IV. Status Of Amendments

Subsequent to the Final Office Action, Appellants submitted an Amendment After Final on December 3, 2003, proposing amendments to claims 38 and 48. In the

Advisory Action dated December 30, 2003, the Examiner indicated that the Amendment After Final would not be entered for the purposes of an appeal.

V. Summary Of Invention

To improve their performance, students often review videos of themselves performing certain activities. One conventional training system, for example, displays an integrated video image of a student performing a golf swing next to an image of a master golfer performing the same swing. That system, however, forces the student to move his head from the proper position for the swing (or other activity) to view the video image, which disrupts his natural swing.

Systems and methods consistent with the present invention instead present a combined video signal of an instructional signal overlaid onto a real-time representation of the student performing a physical activity. To do this, a video camera captures a real-time signal of the student and sends it to a video mixer and a computer. The computer analyzes the real-time signal, which it sends to the video mixer. The mixer generates a composite signal by overlaying the instructional signal onto the real-time representation of the student, and sends the composite signal to a head-mounted display (HMD) for viewing by the student.

In this manner, systems consistent with the invention present the student with a dynamic output video signal based on the real-time input video signal that provides instruction to the student in a clear and uncluttered display. Moreover, displaying the composite signal via an HMD allows the student to perform the physical activity without compromising technique or form.

VI. Prior Art

Mann discloses a system and method for teaching a student physical skills, which includes a processing module for producing and displaying a model of the student. A video overlay performance process uses a video recording of a student performing an activity. The videotape is played back in slow motion with an individual performance model overlayed onto the student's image while performing the same movement. See col. 13, lines 39-41 and 56-62.

Brostedt discloses using a video of an instruction in which the video is preprocessed so that it is horizontally flipped to provide a mirror image of the instructor. The student can then observe the instruction such that the student does not need to make any mental translation of the instructor's movements. When the instructor moves, the student may mimic the exact motion of the instructor. See p. 3, lines 24-32. Brostedt also teaches that a student's swing is viewed at the same time as a video of a professional by superimposing the image of the student onto the outline of the professional. See p. 2, lines 3-7.

VII. Issues

The first issue on appeal is whether the rejection of claims 38, 40-42, 46-48, 50, 51, and 54 under 35 U.S.C. § 102(b) is proper when the only applied reference, Mann, fails to teach "real-time instructional feedback of a user engaged in an activity" including, among other things, "a video controller for receiving the instructional signal and the real-time video signal and combining the received signals to form a composite video signal with an instructional image superimposed onto an image of the user engaged in the activity" and "a first display device displaying the composite video signal

to the user in a manner that allows the user to perform the activity while viewing the displayed signal."

The second issue on appeal is whether the rejection of claims 39, 43-45, 52, and 53 under 35 U.S.C. § 103(a) is proper when there is no motivation to combine the applied references, Mann and Brostedt, and this combination in any event fails to teach or suggest "real-time instructional feedback of a user engaged in an activity" including, among other things, "a video controller for receiving the instructional signal and the real-time video signal and combining the received signals to form a composite video signal with an instructional image superimposed onto an image of the user engaged in the activity" and "a first display device displaying the composite video signal to the user in a manner that allows the user to perform the activity while viewing the displayed signal."

VIII. Grouping Of Claims

In the claims on appeal, claims 38 and 48 are the independent claims. The claims on appeal do not stand or fall together, but rather should be considered in two groups:

Group I: 38, 40-42, 46-48, 50, 51, and 54; and

Group II: 39, 43-45, 52, and 53.

The claims have been placed in these groups due to their common subject matter and due to the manner of the Examiner's rejections. However, Appellants have addressed the outstanding rejections based on the rejections themselves instead of based solely on this grouping.

IX. Argument

A. The Rejection Under 35 U.S.C. § 102(b) of Claims 38, 40-42, 46-48, 50, 51, and 54 is Improper Because Mann Does Not Teach a System or Method Providing Real-time Instructional Feedback of a User Engaged in an Activity That Superimposes an Instructional Image onto an Image of the User Engaged in the Activity That the User May View While Engaged in the Activity.

The Examiner rejected claims 38, 40-42, 46, 48, 50, 51, and 54 under 35 U.S.C. § 102(b) as anticipated by Mann. To anticipate Appellants' claimed invention under 35 U.S.C. § 102(b), a single prior art reference must contain each and every element of the claim in issue. Furthermore, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." *See* M.P.E.P. § 2121 (8th ed., Aug. 2001), *quoting* Richardson v. Suzuki Motor Co., 868 F.2d 1126, 1236, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). Finally, "[t]he elements must be arranged as required by the claim." M.P.E.P. § 2131 (8th ed. 2001), p. 2100-69.

Claim 38 recites a system for providing "real-time instructional feedback of a user engaged in an activity" including, among other things, "a video controller for receiving the instructional signal and the real-time video signal and combining the received signals to form a composite video signal with an instructional image superimposed onto an image of the user engaged in the activity" and "a first display device displaying the composite video signal to the user in a manner that allows the user to perform the activity while viewing the displayed signal."

By contrast, the video overlay performance process in Mann uses a video recording of a student performing an activity in the past, not in real-time. Fig. 1, for example, shows video recorders 16 and 18 being used to capture images of student 8, which are then played back with a performance model. When the videotape is played

back in slow motion, a performance model overlayed onto the recorded student's image. See col. 13, lines 39-41 and 56-62. Thus, Mann discloses overlaying a performance model over the student's image after the student has performed the activity.

Mann, therefore, fails to teach at least "a video controller for receiving the instructional signal and the real-time video signal and combining the received signals to form a composite video signal with an instructional image superimposed onto an image of the user engaged in the activity" and "a first display device displaying the composite video signal to the user in a manner that allows the user to perform the activity while viewing the displayed signal." Appellants' claim 48 recites a method similar in scope to claim 38. Because Mann requires videotaping the student's performance for later viewing, the student is unable to receive real-time instructional feedback as he or she performs the activity. Accordingly, Applicants respectfully request that the Board reverse the rejection of claims 38 and 48 under § 102(b).

Claims 40-42, 46-47, 50, 51, and 54 depend from claims 38 or 48 and require the recitations of their respective independent claims. These dependent claims are thus allowable at least due to their dependence from allowable independent claims. Applicants respectfully request that the Board reverse the rejection of claims 40-42, 46-47, 50, 51, and 54 as well.

B. The Rejection Under 35 U.S.C. § 103(a) of Claims 39, 43-45, 52, and 53 is Improper Because the Combination of Mann and Brostedt is Improper and the Combination Does Not Disclose or Suggest a System or Method Providing Real-time Instructional Feedback of a User Engaged in an Activity That Superimposes an Instructional Image onto an Image of the User Engaged in the Activity That the User May View While Engaged in the Activity.

The Examiner rejected claims 39, 43-45, 52, and 53 under 35 U.S.C. § 103(a) as unpatentable over Mann in view of Brostedt. As discussed above, Mann discloses a video overlay performance process requiring the viewer to perform an activity and then view a combined signal at a later time. Brostedt, however, does not make up for the deficiencies of Mann with regard the independent claims: (1) a video controller for receiving the instructional signal and the real-time video signal and combining the received signals to form a composite video signal with an instructional image superimposed onto an image of the user engaged in the activity; and (2) a first display device displaying the composite video signal to the user in a manner that allows the user to perform the activity while viewing the displayed signal. Instead, Brostedt discloses using a preprocessed video that provides a mirror image of the instructor to a student by horizontally flipping a preprocessed image. This allows the student to mimic the motion of the instructor. See p. 3, lines 24-32.

Additionally, to establish a *prima facie* case of obviousness of a claimed invention, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the references in a manner resulting in the claimed invention. *See* M.P.E.P. § 2143.01 (8th ed. 2001). Because there is no motivation to combine Mann and

Brostedt, the rejection under 35 U.S.C. § 103(a) is improper for at least this additional reason.

The Examiner applied Brostedt to reject dependent claims 39, 43-45, 52, and 53. However, there is no motivation for one of skilled in the art to combine Brostedt with Mann. In particular, Mann does not teach real-time display. Instead, Mann teaches overlaying a performance model over the student's image after the student has performed the activity. There is therefore no motivation to combine Brostedt's teaching of a head mounted display, for example, nor the system of Brostedt, with that of Mann. In fact, Mann teaches away from real-time display due to the complex processing operations preformed to match an individual performance model to a student's performance. See for example, the software discussion in Mann beginning at column 15 and running through column 34.

Further, Brostedt teaches displaying an actual instructor, side by side with a student, or simply displaying an instructor that a student can mimic. Brostedt therefore teaches away from the complex processing operations performed by Mann to obtain a scaled individual performance model that matches the size and shape of a particular student. Instead, Brostedt's goal is for a student to compare his or her performance with an actual instructor and not a simulated model.

Accordingly, for at least these reasons, there is no suggestion or motivation combine the references, and therefore, the obviousness rejection under Mann in view of Brostedt is improper. Accordingly, Appellants respectfully request the Board to reverse the rejection of claims 39, 43-45, 52, and 53.

CONCLUSION

For the reasons given above, Appellants respectfully request that the Board of Patent Appeals and Interferences reverse the Examiner's rejection of claims 38-54. An appendix containing a copy of the claims involved in the appeal is attached.

To the extent any further extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this Appeal Brief, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: April 28, 2004

By: _____
Anthony J. Lombardi
Reg. No. 53,232

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APPENDIX

38. A system for providing real-time instructional feedback of a user engaged in an activity comprising:

a video camera forming a real-time video signal of the user engaged in the activity;

a processor generating an instructional signal;

a video controller for receiving the instructional signal and the real-time video signal and combining the received signals to form a composite video signal with an instructional image superimposed onto an image of the user engaged in the activity; and

a first display device displaying the composite video signal to the user in a manner that allows the user to perform the activity while viewing the displayed signal.

39. The system of claim 38, wherein the first display device includes a head-mounted display.

40. The system of claim 38, further including a second display device, coupled to the video controller, for displaying an annotated video signal; and

wherein the video controller includes circuitry for generating the annotated video signal from the real-time video signal.

41. The system of claim 40, wherein the video controller includes a signal splitter.

42. The system of claim 38 wherein the video controller includes a video mixer for superimposing the instructional signal with the real-time video signal.

43. The system of claim 38, further including an audio output; and

wherein the video controller also includes circuitry for generating an aural signal for the audio output.

44. The system of claim 43, wherein the audio output includes earphones.

45. The system of claim 44, further including a microphone, coupled to the video controller, for generating an electrical signal representing an audio signal; and

wherein the video controller generates the aural signal from the audio signal.

46. The system of claim 38, wherein the processor includes a personal computer.

47. The system of claim 38, wherein the processor includes

means for receiving an instructional input generated at a site remote from the user; and

means for converting the instructional input into the instructional signal.

48. A method for providing real-time instructional feedback of a user engaged in an activity comprising:

forming a real-time video signal of the user engaged in the activity;

generating an instructional signal;

combining the instructional signal and the real-time video signal to form a composite video signal with an instructional image superimposed onto an image of the user engaged in the activity; and

displaying the composite video signal to the user on a first display device in a manner that allows the user to perform the activity while viewing the displayed signal.

49. The method of claim 48, wherein displaying includes displaying the composite video signal on a head-mounted display.

50. The method of claim 48, further including

displaying an annotated video signal, generated from the real-time video signal, on a second display device.

51. The method of claim 48, further including

superimposing the instructional signal with the real-time video signal.

52. The method of claim 48, further including

generating an aural signal.

53. The method of claim 52, further including

generating an electrical signal representing an audio signal; and

generating the aural signal from the audio signal.

54. The method of claim 48, further including

receiving an instructional input generated at a site remote from the user; and

converting the instructional input into the instructional signal.

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Sir:

TRANSMITTAL OF APPEAL BRIEF (37 C.F.R. 1.192)

Transmitted herewith in triplicate is the APPEAL BRIEF in this application with respect to the Notice of Appeal filed on January 29, 2004. Applicants hereby petition for a one-month extension of time.

This application is on behalf of a:

☒ Small Entity ☐ Large Entity

Pursuant to 37 C.F.R. 1.17(c), the fee for filing the Appeal Brief is:

☒ $165.00 (Small Entity)

☐ $330.00 (Large Entity)

TOTAL FEE DUE:

Fee for Filing Brief (Small Entity) $165.00

One Month Extension Fee (Small Entity)	$55.00
Total Fee Due	$230.00

☒ Enclosed is a check for $230.00 to cover the above fees.

PETITION FOR EXTENSION. If any extension of time is necessary for the filing of this Appeal Brief, and such extension has not otherwise been requested, such an extension is hereby requested, and the Commissioner is authorized to charge necessary fees for such an extension to our Deposit Account No. 06-0916. A duplicate copy of this paper is enclosed for use in charging the deposit account.

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: April 28, 2004

By: _____
Anthony J. Lombardi
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